

## Lighting your home with LEDs

### What are LEDs?

Light emitting diodes (LEDs) are a type of solid-state lighting; semiconductors that convert electricity into light. If you haven't been down the lighting aisle of your favorite home improvement store lately, you may be surprised at how many LED lighting products have arrived. Although once used primarily for indicator and traffic lights, LEDs in homes and businesses are one of today's most energy-efficient and rapidly-developing technologies. LEDs are six to seven times more energy efficient than conventional incandescent lights, cut energy use by more than 80 percent and can last more than 25 times longer.<sup>1</sup>

LED bulbs are currently available as replacements for 40, 60, 75 and 100 watt incandescents, reflector bulbs (used in recessed fixtures), small track lights, three-way bulbs and even holiday light strings.

### How much can I save?

While the price tag of an LED is more than an incandescent bulb, they still save money because they last a long time and have very low energy use. The Department of Energy estimates using a traditional incandescent bulb adds about \$4.80 per year to the average home electric bill. A compact fluorescent light (CFL) adds just \$1.20 per year and an LED about \$1 per year. That means a typical household could potentially save about \$50 per year by replacing 15 incandescent bulbs.

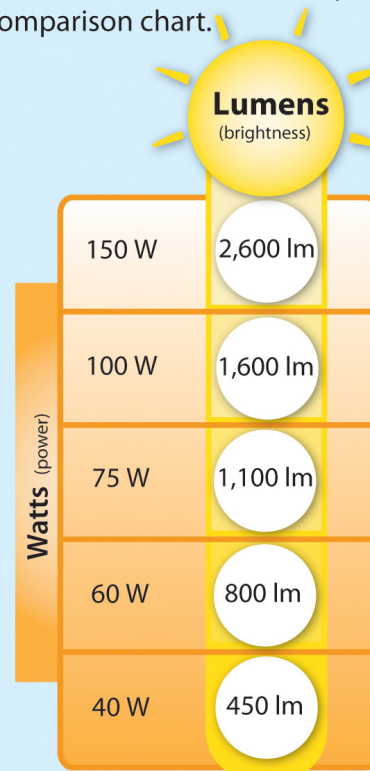
### Buy lumens, not watts

What is a lumen? Lumens measure the light output of a bulb. More lumens means it's a brighter light; fewer lumens means it's a dimmer light. We typically buy items based on how much of it we get, right? When buying milk, we buy it by volume (gallons). So, why should light be any different? For decades, we have been buying light bulbs based on how much energy they consume (watts), no matter how much light they produce (lumens). Lumens let you buy the amount of light you want. So when buying your new bulbs, think lumens, not watts. Look at the chart on the right for comparisons.



### What to Look for When Purchasing Lightbulbs

Instead of shopping for watts, look for lumens. Here's a helpful comparison chart.



Estimates based on typical incandescent bulbs.  
Source: U.S. Federal Trade Commission

<sup>1</sup>U.S. Department of Energy, [energy.gov](http://energy.gov)

## Read the label

When choosing a new bulb, always check the package. Make sure it has the ENERGY STAR® logo. Lighting Facts labels on boxes will also help you understand what you are purchasing. The label lists the amount of lumens, estimated annual operating cost and light color. See an example of a “Lighting Facts” label on the right.

## Color for every mood

There are two ways to measure color output of LEDs. The correlated color temperature (CCT) measures light color. “Cool” colors have a higher Kelvin (K) rating (3600-5500 K) and are better for visual tasks. “Warm” colors have lower ratings (2700-3000 K) and are better for living spaces because it casts a warmer light on skin and clothing. The color rendering index (CRI) measures the effect of the lamp’s light spectrum on the color appearance of objects. The higher the number, the truer the appearance of the light on objects.

## Three steps to find new bulbs

Follow these steps to shop for new bulbs to save energy and money.

1. Choose the amount of lumens you need based on how bright you want a room.
2. Determine which bulb has the lowest estimated energy cost per year. This will save you the most money.
3. Choose bulbs based on your needs, such as how long it will last and light appearance.

## Buyer beware!

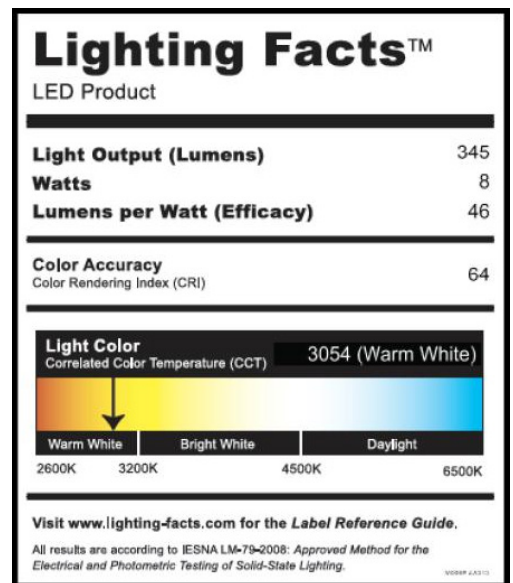
Poor quality LED products are flooding the marketplace. Some are manufactured outside of the United States with components that produce low light levels, don’t have a long service life or make exaggerated energy saving claims.

**Don’t be fooled.** Look for the ENERGY STAR® logo for guaranteed color quality over time, steady light output over the lifetime, high efficiency and a warranty.

## Take Control & Save

About 10 percent of the average household’s energy use goes to lighting costs. By purchasing the most efficient lighting products that work for your home, you can reduce your energy use and costs.

To learn more about how to save energy and money in your home, contact the energy advisor at your local electric cooperative or visit [www.TakeControlAndSave.coop](http://www.TakeControlAndSave.coop).



Use the Lighting Facts label, found on most bulb packages, to make educated decisions about your lighting.

## Facts summary

The LED Lighting Facts label provides a quick summary of product performance in five areas:

- \* Lumens: the higher the number, the more light is emitted.
- \* Lumens per watt measures efficiency. The higher the number, the more efficient the product.
- \* Watts measure the energy required to light the product. The lower the wattage, the less energy is used.
- \* Correlated Color Temperature (CCT) measures light color. Color temperatures of 2700 to 3600 Kelvin are recommended for most general indoor and task lighting.
- \* Color Rendering Index (CRI) measures the effect of the lamp’s light spectrum on the color appearance of objects. A higher number gives truer light.